

ABSTRACT

A communication system provides communication services to a plurality of communication devices. The communication system includes a transmitting antenna, a transmitter, a first receiving antenna, a second receiving antenna, a second receiver, and a communication interface. The transmitter transmits first wireless signals via the transmitting antenna. The first receiving antenna has a first coverage area of less than forty five degrees. The first receiver receives second wireless signals via the first receiving antenna. The second receiving antenna has a second coverage area of less than forty five degrees, and the second coverage area of the second receiving antenna is within the first coverage area. The second receiver receives third wireless signals via the second receiving antenna. The communication interface provides the communication services between the communication network and the user communication devices.